Space Weather Forecast

Issued on Friday, 12 July 2024 at 01:24 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Moderate-class flares expected. Chance of G1 Minor Storms mainly day 3 (13 Jul).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Moderate with two Moderate class flares observed, the largest of which originated from a region in the south centre disc. This is largest and most complex of the nine sunspot regions on the disc, and has seen ongoing slow growth with further small spots emerging within it. The remaining regions are all smaller and simpler and mostly stable or decaying.

No Earth-directed coronal mass ejections (CMEs) occurred, however a CME was observed from off the far-side of the Sun, heading away from Earth.

Solar Wind / Geomagnetic Activity: Slow wind conditions remained at background around 350-380km/s. Interplanetary Magnetic Field was weak with the north-south component, varying weakly. Geomagnetic activity was Quiet.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) persisted at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be at Low to Moderate levels, with a slight chance of becoming High from any isolated strong flares, which are most likely to originate from the large, centre-disc sunspot region.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. Slow wind conditions are expected at first, with a chance of a slight enhancement from the arrival of any faster solar winds from the small southwestern coronal hole today (12 Jul). A more notable enhancement is then likely tomorrow, peaking later in the day or early day 3 (Jul 13-14), due to the onset of the fast winds of a more notable coronal hole in the northwestern disc. Initially Quiet geomagnetic conditions are expected to increase to become Unsettled at times today (12th) and then Active to G1/Minor geomagnetic storm later tomorrow into day 3 (14th). Through day 4 (15th) Quiet to Unsettled conditions are expected to return.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background with no solar radiation storms occurring. However, there is a chance of the count rate rising in response to any notable solar flares from the large sunspot region in the southern centre disc.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.

Met Office

Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	10	30	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	Yes	75	75	70	60
Very Active	R3 to R5 X	No	10	10	10	10

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	10	15	15	15
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.